IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Presented) A method for transmitting data from a radio network subsystem to user equipment in a mobile telephone system, comprising:

the radio network subsystem transmits a physical control channel to the user equipment;

the radio network subsystem transmits a physical traffic channel of variable data transmission rate to the user equipment;

during transmission, the radio network subsystem spreads each channel with a spreading code;

the spreading code used to spread the traffic channel is changed according to a required data transmission rate, and

wherein each control channel frame indicates the spreading code with which a corresponding traffic channel frame is spread when transmitted, and

wherein the control channel and traffic channel frames associated with each other are transmitted on the same frequency, spread with a different spreading code, and separated by one frame length at most.

2. (Cancelled).

3. (Previously Presented) A method as claimed in claim 1, wherein the control channel frame comprises a transport format indicator in which the spreading code used to spread the traffic channel is disclosed.

4. (Previously Presented) A method as claimed in claim 1, wherein the spreading codes are arranged into a code tree in such a manner that on the first level, the code tree root comprises a one-bit spreading code, the second level comprises two branches with mutually orthogonal two-bit spreading codes, the third level comprises four branches with mutually orthogonal four-bit spreading codes, the fourth level comprises eight branches with mutually orthogonal eight-bit spreading codes, the fifth level comprises sixteen branches with

mutually orthogonal sixteen-bit spreading codes, the sixth level comprises thirty two branches with mutually orthogonal thirty-two-bit spreading codes, the seventh level comprises sixty four branches with mutually orthogonal sixty-four-bit spreading codes, the eighth level comprises one hundred and twenty eight branches with mutually orthogonal 128-bit spreading codes, the ninth level comprises two hundred and fifty six branches with mutually orthogonal 256-bit spreading codes.

5. (Previously Presented) A method as claimed in claim 4, wherein a part of the spreading codes of the code tree are reserved for the use of the control channels.

6. (Previously Presented) A method as claimed in claim 4, wherein the code tree is divided into sub-code trees and one branch in a level is a tree access point to a sub-code tree, and the branches below the tree access point belong to the sub-code tree in question.

7. (Previously Presented) A method as claimed in claim 6, wherein the data transmission rate of the traffic channel is changed by changing the length of its spreading code by moving between the levels of the sub-code tree.

8. (Previously Presented) A method as claimed in claim 7, wherein each spreading code of a sub-code tree is numbered in an agreed manner and the number in question is entered into a transport format indicator.

9. (Previously Presented) A method as claimed in claim 8, wherein the number refers to at least two parallel spreading codes.

10. (Previously Presented) A method as claimed in claim 7, wherein the user equipment does not send an acknowledgement to the radio network subsystem after receiving a transport format indicator.

11. (Currently Amended) A method as claimed in claim 1, wherein ~~signalling~~ signaling of the physical layer, data link layer and network layer are transmitted in the control channel.

12. (Previously Presented) A method as claimed in claim 6, wherein the radio network subsystem signals the tree access point of the sub-code tree to the user equipment and the user equipment sends an acknowledgement to the radio network subsystem.

13. (Currently Amended) A method as claimed in claim 12, wherein the ~~signalling~~ signaling of the tree access point of the sub-code tree is performed as ~~signalling~~ signaling of the MAC sub-layer in the data link layer.

14. (Previously Presented) A method as claimed in claim 6, wherein at least two different units of user equipment use the various spreading codes of the same sub-code tree.

15. (Previously Presented) A method as claimed in claim 14, wherein the radio network subsystem allocates the spreading codes.

16. (Previously Presented) A method as claimed in claim 15, wherein when the sub-code tree becomes congested, the user equipment can be transferred to another sub-code tree.

17. (Previously Presented) A method as claimed in claim 1, wherein the radio network subsystem transmits the traffic channel frames in a synchronized manner to the units of user equipment which belong to the same sub-code tree.

18. (Previously Presented) A method as claimed in claim 1, wherein the data transmission rate of the control channel is as low as possible.

19. (Previously Presented) A method as claimed in claim 1, wherein the control channel contains pilot bits for channel estimation.

20. (Previously Presented) A method as claimed in claim 1, wherein the traffic channel contains only useful load of a user.

21. (Previously Presented) A method as claimed in claim 1, wherein the radio network subsystem transmits the control channel frames of different user equipment as non-simultaneously as possible.

22. (Previously Presented) A method as claimed in claim 1, wherein data or speech is transmitted in free capacity of the control channel frame.

23. (Previously Presented) A method as claimed in claim 1, wherein the same spreading code is always used in spreading the control channel.

24. (Previously Presented) A method as claimed in claim 1, wherein the data transmission rate of the control channel is fixed.

25. (Previously Presented) A method as claimed in claim 1, wherein the method is used in a universal mobile telecommunication system using a direct-sequence wideband code division multiple access method.

26. (Previously Presented) A radio network subsystem which is adapted to:

transmit a physical control channel to user equipment;

transmit a physical traffic channel of variable data transmission rate to the user equipment;

spread each channel with a spreading code during transmission; and

change the spreading code used to spread the traffic channel according to a required data transmission rate, wherein

the radio network subsystem is adapted to indicate in each control channel frame the spreading code with which a corresponding traffic channel frame is spread when transmitted, and

wherein the radio network subsystem is adapted to transmit the control channel and traffic channel frames associated with each other on the same frequency, spread with different spreading codes, and separated by one frame length at most.

27. (Cancelled)

28. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the control channel frame comprises a transport format indicator into which the radio network subsystem is adapted to enter the identification data of the spreading code used to spread the traffic channel.

29. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the spreading codes are arranged into a code tree in such a manner that on the first level, the code tree root comprises a one-bit spreading code, the second level comprises two branches with mutually orthogonal two-bit spreading codes, the third level comprises four branches with mutually orthogonal four-bit spreading codes, the fourth level comprises eight branches with mutually orthogonal eight-bit spreading codes, the fifth level comprises sixteen branches with mutually orthogonal sixteen-bit spreading codes, the sixth level comprises thirty two branches with mutually orthogonal thirty-two-bit spreading codes, the seventh level comprises sixty four branches with mutually orthogonal sixty-four-bit spreading codes, the eight level comprises one hundred and twenty eight branches with mutually orthogonal 128-bit spreading codes, the ninth level comprises two hundred and fifty six branches with mutually orthogonal 256-bit spreading codes.

30. (Previously Presented) A radio network subsystem as claimed in claim 29, wherein the radio network subsystem is adapted to reserve a part of the spreading codes in the code tree for the use of the control channels.

31. (Previously Presented) A radio network subsystem as claimed in claim 29, wherein the radio network subsystem is adapted to divide the code tree into sub-code trees, and one branch in a level is a tree access point to a sub-code tree, and the branches below the tree access point belong to the sub-code tree in question.

32. (Previously Presented) A radio network subsystem as claimed in claim 31, wherein the radio network subsystem is adapted to change the data transmission rate of the traffic channel by changing the length of its spreading code by moving between the levels of the sub-code tree.

33. (Previously Presented)) A radio network subsystem as claimed in claim 32, wherein the radio network subsystem is adapted to number each spreading code of a sub-code tree in an agreed manner and to enter the number in question into a transport format indicator.

34. (Previously Presented) A radio network subsystem as claimed in claim 33, wherein the number refers to at least two parallel spreading codes.

35. (Previously Presented) A radio network subsystem as claimed in claim 32, wherein the radio network subsystem does not expect an acknowledgement from the user equipment after transmitting a transport format indicator to the user equipment.

36. (Currently Amended) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to transmit ~~signalling~~ signaling of the physical layer, data link layer and network layer in the control channel.

37. (Currently Amended) A radio network subsystem as claimed in claim 31, wherein the radio network subsystem is adapted to signal the tree access point of the sub-code tree to the user equipment and to await an acknowledgement to its ~~signalling~~ signaling from the user equipment.

38. (Currently Amended) A radio network subsystem as claimed in claim 37, wherein the radio network subsystem is adapted to perform the ~~signalling~~ signaling of the tree access point of the sub-code tree as ~~signalling~~ signaling of the MAC sub-layer in the data link layer.

39. (Previously Presented) A radio network subsystem as claimed in claim 31, wherein the radio network subsystem is adapted to use the various spreading codes of the same sub-code tree for at least two different units of user equipment.

40. (Previously Presented) A radio network subsystem as claimed in claim 39, wherein the radio network subsystem is adapted to allocate the spreading codes.

41. (Previously Presented) A radio network subsystem as claimed in claim 40, wherein when the sub-code tree becomes congested, the radio network subsystem is adapted to transfer the user equipment to another sub-code tree.

42. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to transmit the traffic channel frames in a synchronized manner to the units of user equipment which belong to the same sub-code tree.

43. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to set the data transmission rate of the control channel as low as possible.

44. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to place pilot bits into the traffic channel for channel estimation.

45. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to place only useful load in the traffic channel.

46. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to transmit the control channel frames of different user equipment as non-simultaneously as possible.

47. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to place data or speech in free capacity of the control channel frame.

48. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to always use the same spreading code in spreading the control channel.

49. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is adapted to transmit the control channel at a fixed data transmission rate.

50. (Previously Presented) A radio network subsystem as claimed in claim 26, wherein the radio network subsystem is a part of a universal mobile telecommunication system using a direct-sequence wideband code division multiple access method.

51. (Currently Amended) User equipment comprising:
a receiver which is adapted to[[:]]

receive a physical control channel transmitted by a radio network subsystem; and

receive a physical traffic channel of variable data transmission rates transmitted by the radio network subsystem, wherein a spreading code used by the radio network subsystem to spread the traffic channel during transmission is changed according to a required data transmission rate; and

a control part which is adapted to

remove the spreading of each channel with a spreading code, wherein

the user equipment is adapted to read from each control channel frame the spreading code with which a corresponding traffic channel frame is spread, and

wherein the user equipment is adapted to receive the control channel frames and traffic channel frames associated with each other transmitted by the radio network subsystem on the same frequency, spread with different spreading codes, and separated by one frame length at most.

52. (Cancelled)

53. (Previously Presented) User equipment as claimed in claim 51, wherein the control channel frame comprises a transport format indicator from which the user equipment is adapted to read the identification data of at least one spreading code used to spread the traffic channel.

54. (Previously Presented) User equipment as claimed in claim 51, wherein the user equipment is adapted to perform channel estimation by means of the pilot bits in the control channel.

55. (Previously Presented) User equipment as claimed in claim 51, wherein the user equipment is adapted to always use the same spreading code in removing the control channel spreading.

56. (Previously Presented) User equipment as claimed in claim 51, wherein the user equipment is used in a universal mobile telecommunication system using a direct-sequence wideband code division multiple access method.